REMARKS

Claims 1-26 are pending in the present patent application. Claims 1-26 stand rejected. This application continues to include claims 1-26.

Claims 1-26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Onishi, et al., U.S. Patent No. 6,698,875 B2 (hereinafter, Onishi) in view of Gompertz, et al., U.S. Patent No. 5,742,306 (hereinafter, Gompertz) and Logan, U.S. Patent No. 4,680,596. Applicants respectfully request reconsideration of the rejection of claims 1-26 in view of the following.

In Applicants' previous response, Applicant's argued reasons why one skilled in the art would not be motivated to combine Onishi with Gompertz in attempting to achieve the claimed invention, and in particular, to provide a configuration having a first ink reservoir containing a chromatic dye-based ink coupled in fluid communication with a first printhead, and a second ink reservoir containing a chromatic pigment-based ink coupled in fluid communication with the second printhead. Neither Onishi nor Gompertz show such a configuration, but the Examiner relies on their combination in attempting to achieve the claimed invention.

Notwithstanding, Applicants amended claim 1 to further clarify that a physical separation between the first printhead and the second printhead builds in a drying time between a time that a chromatic dye-based ink drop expelled by the first printhead contacts a chromatic pigment-based ink drop expelled from the second printhead at a particular pixel location on a print media sheet or at an adjacent location on the print media sheet where the chromatic dye-based ink drop and the chromatic pigment-based ink drop may overlap. The Examiner introduces a third reference, Logan, with respect to this claim limitation, relying on Logan, column 4, line 50-column 5, line 11.

Logan, column 4, line 50-column 5, line 11, recites a configuration wherein the printheads are spaced vertically by equal distances of two (2) inches. Such a spacing, however, does not constitute a "separation" between the first printhead and the second printhead, as recited in claims 1 and 20. The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) quoting *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827 (Fed. Cir. 2004) (Emphasis added). One looks to the specification "to ascertain the meaning of a claim term as it is used by the inventor in the context of the entirety of his invention." *Comark Communications v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998).

Applicants' specification at page 7, lines 18-25, recites that, "This physical separation translates into a physical separation of corresponding standard color printhead 34 and photo printhead 36 along the bi-directional scanning path 44a of printhead carrier 32. *This separation*, in turn, builds in a drying time between the time that an ink droplet expelled by one of standard color printhead 34 and photo printhead 36 at a particular pixel location on the print media sheet 30 can be contacted by another ink drop expelled from the other of the standard color printhead 34 and photo printhead 36 at the same pixel location, or at an adjacent location where the ink droplets may overlap." (Emphasis added). Thus, in the context of the entirety of the invention, the "separation" between the first printhead and the second printhead is in the horizontal direction (bi-directional scanning path/axis 44a; see Applicants' spec. at page 5, lines 9-12), which is not a vertical direction spacing, as in Logan.

Further, like Onishi and Gompertz, Logan also does not disclose, teach or suggest a configuration having a first ink reservoir containing a chromatic dye-based ink coupled in fluid communication with a first printhead, and a second ink reservoir containing a chromatic pigment-based ink coupled in fluid communication with the second printhead. In particular, for example, Logan states at column 3, lines 22-28, "[t]he colors cyan, magenta and yellow result directly from the printing of those pigmented inks. The colors red, blue, green and black result from the overlay of the pigmented inks with red being produced from magenta and yellow; green from cyan and yellow; blue from magenta and cyan, and black from the overlay of all three." (Emphasis added). Nowhere does Logan even mention the use of dye-based inks.

Accordingly, even if Logan were combined with Onishi and/or Gompertz, the combination would not yield the claimed invention, as recited in Applicants' claims 1 and 20.

Further, the Examiner asserts with respect to claims 1, 20 and 26 (present Office Action, page 5) that to modify the printhead of Onishi into a separate printhead for a different type of ink is made obvious by the unitary structure printhead of Gompertz, and that the reason to modify Onishi with Gompertz is to provide convenience and cost effectiveness as when one of the cartridges needs to be replaced. The Examiner further asserts (present Office Action, page 6) that it would have been obvious to physically arrange the first printhead and the second printhead with a spacing in Ohishi in view of Gompertz according to the Logan overall teachings for the purpose of promoting drying time between ink drop ejection from different printheads at the same location. Applicants respectfully disagree with each of these assertions.

The combination of Onishi with Logan and/or Gompertz, is tantamount to an impermissible hindsight reconstruction of Applicants' claims. It is well settled that the Examiner may not,

because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. *In re Warner*, 154 U.S.P.Q. 173,178 (CCPA 1967).

Onishi discloses a single printing head 28 with nozzle arrays 61-66 for black and color inks (col. 18, lines 29-32, Fig. 5), wherein the dark cyan and magenta inks, and the black and yellow inks are dye-based, whereas the light cyan and magenta inks are pigment-based (col. 19, lines 12-18). Thus, although Onishi discloses both dye-based and pigment-based inks, the Onishi dye-based and pigment-based inks are introduced into nozzle arrays 61-66 of the singular printing head 28. Thus, the singular printing head 28 of Onishi clearly does not disclose a first printhead and a second printhead, much less wherein the first printhead is in fluid communication with a first ink reservoir containing a chromatic dye-based ink, whereas the second printhead is in fluid communication with a second ink reservoir containing a chromatic pigment-based ink, as recited for example, in claim 1.

In contrast to Onishi, Gompertz discloses that a color pen 62 may contain a pigment based ink, but that pen 62 is described as containing three dye based ink colors, such as cyan, yellow and magenta (col. 5, lines 7-10). A black pen 60 contains a pigment-based ink (col. 5, lines 10-11). A full color pen may be used in conjunction with imaging pens having 10% and 40% colorant concentrations, respectively (col. 8, lines 7-25). Gompertz, however, does not address printing on a sheet of media with both chromatic pigment-based inks and chromatic dye-based inks.

Since Onishi already discloses printing with chromatic pigment-based inks and chromatic dye-based inks, in the absence of recognition of the problems associated with overlaying chromatic

pigment-based inks and chromatic dye-based inks, there would be no motivation for one skilled in the art to modify the single printhead arrangement of Onishi in view of Gompertz.

The Examiner's stated reasons of convenience and cost effectiveness for modifying Onishi with Gompertz have nothing to do with the problem being solved by the present invention, and in fact an opposite argument can be made that such a modification of Onishi does not provide convenience and does not provide cost effectiveness. For example, it is no more convenient for a user to replace a single cartridge having multiple nozzle arrays for jetting multiple inks than it is to replace a single cartridge having a single nozzle array for jetting a single ink. Further, it is likely that using individual cartridges as in Gompertz for jetting, for example, five colors of ink actually costs more than having a single printhead cartridge, as in Onishi, for jetting five colors of ink. Accordingly, the asserted reasons for such a modification of Onishi with Gompertz do not hold. Thus their combination is tantamount to an impermissible hindsight reconstruction of Applicants' claims.

The further inclusion of the third reference (Logan) with respect to the separation of the first printhead and the second printhead further points to an impermissible hindsight reconstruction of Applicants' claims, in view of the distinctions between Logan and the claimed invention, as set forth above. In summary, and in contrast to Applicants' invention, Logan discloses using only chromatic pigmented inks, with no mention of dye based inks, and discloses multiple printheads spaced vertically by two (2) inches. Further, like Onishi and Gompertz, Logan also does not recognize or address the problems associated with overlaying chromatic pigment-based inks and chromatic dye-based inks.

Thus, Applicants contend that one skilled in the art would not be motivated to modify Onishi with Gompertz and/or Logan in attempting to achieve the claimed invention. In particular, for the reasons set forth above, the Onishi, Gompertz and Logan configurations do not disclose, teach, or suggest a separation, in the context of the entirety of the invention, as between the printhead for chromatic dye-based ink and the printhead for chromatic pigment-based inks, wherein a physical separation between said first printhead and said second printhead builds in a drying time between a time that a chromatic dye-based ink drop expelled by said first printhead contacts a chromatic pigment-based ink drop expelled from said second printhead at a particular pixel location on a print media sheet or at an adjacent location on said print media sheet where said chromatic dye-based ink drop and said chromatic pigment-based ink drop may overlap.

Accordingly, for at least the reasons set forth above, Applicants respectfully submit that independent claims 1 and 20 are allowable in their present form.

Claims 2-19 depend, directly or indirectly, from claim 1, and are believed allowable in view of their respective dependence from otherwise allowable base claim 1. In addition, claims 2-19 further and patentably define the present invention over the cited references.

For example, claim 9 recites, "The ink jet printer of claim 1, said second ink reservoir including a plurality of ink chambers containing a plurality of chromatic pigment-based inks, each having a respective hue, and said second printhead including a plurality of nozzle arrays, wherein a first nozzle array of said plurality of nozzle arrays is coupled in fluid communication with a first ink chamber of said plurality of ink chambers that contains a first chromatic ink having a first hue, and a second nozzle array of said plurality of nozzle arrays is coupled in fluid communication with a second ink chamber of said plurality of ink chambers that contains an achromatic ink."

Thus, the arrangement of claim 9 read in conjunction with claim 1 requires a first printhead coupled to a first ink reservoir containing chromatic dye-based ink and a second printhead, separated from the first printhead, coupled to a second ink reservoir having a plurality of ink chambers containing a plurality of chromatic pigment-based inks and an achromatic ink and having a plurality of nozzle arrays, with one of the nozzle arrays of the second printhead coupled to an ink chamber containing the achromatic ink. None of the cited references, taken alone or in combination, disclose, teach or suggest such an arrangement, as recited in claim 9 read in conjunction with claim 1.

Claim 10 recites, "The ink jet printer of claim 9, said second ink reservoir including a third nozzle array coupled in fluid communication with a third ink chamber containing a second chromatic ink having a second hue different from said first hue, said second nozzle array for jetting said achromatic ink being *positioned between* said first nozzle array for jetting said first chromatic ink having said first hue and said third nozzle array for jetting said second chromatic ink having said second hue." (Emphasis added). None of the cited references, taken alone or in combination, disclose, teach or suggest a printhead having such an arrangement, as recited in claim 10.

Claims 21-26 depend, directly or indirectly, from claim 20, and are believed allowable in view of their respective dependence from otherwise allowable base claim 20. In addition, claims 21-26 further and patentably define the present invention over the cited references.

For example, claim 26 is directed to the method of claim 20, wherein chromatic dye-based ink drops and chromatic pigment-based ink drops may be layered, or be overlapping, in forming said color image. Onishi, Gompertz and Logan, taken alone or in combination, do not disclose, teach, or suggest a method wherein chromatic dye-based ink drops and chromatic pigment-based

ink drops may be layered, or be overlapping, in forming the color image, as recited in claim 26. Further, Logan only discloses layering of chromatic pigmented inks (column 3, lines 24-28), with no mention of chromatic dye-based inks.

Accordingly, claim 26 is believed patentable in its own right.

Therefore, it is respectfully requested that the Examiner withdraw the rejection of claims 1-26 as being unpatentable under 35 U.S.C. 103(a) over Onishi in view of Gompertz and Logan.

Applicants believe the present application is in condition for allowance, and it is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorize that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (317) 894-0801.

Respectfully submitted,

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